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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/016,604	12/07/2001	Pablo D. Garcia	PP016466.0002	6543

27476 7590 05/28/2008

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EXAMINER	
HUMPHREY, LOUISE WANG ZHIYING	
ART UNIT	PAPER NUMBER
1648	

MAIL DATE	DELIVERY MODE
05/28/2008	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/016,604	GARCIA ET AL.	
	Examiner	Art Unit	
	LOUISE HUMPHREY	1648	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *11 February 2008*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1,3-6,10,13-15 and 39-113* is/are pending in the application.

4a) Of the above claim(s) *4-6,50-52,66-68,80-82,91-93,100-102 and 109-111* is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1,3,10,13-15,39-49,53-65,69-79,83-90,94-99,103-108,112 and 113* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *07 December 2001* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1)☐ Notice of References Cited (PTO-892)

2)☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3)☒ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date *11/8/07, 2/11/08*.

4)☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.

5)☐ Notice of Informal Patent Application

6)☐ Other: _____.

Continued Examination Under 37 CFR 1.114

A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 22 August 2007 has been entered.

DETAILED ACTION

The Office acknowledges the receipt of Applicant's election and Amendment, filed on 11 February 2008. Claims 2, 7-9, 11, 12 and 16-38 are cancelled. New claims 39-113 are added. Claims 1, 3-6, 10, 13-15, and 39-113 are pending.

Election/Restriction

Applicant elects SEQ ID NO:26, with traverse. Applicant further requests examining multiple sequences together based on the ground that the sequences are obtained from and are overlapping regions of the same HERV isolate, HERV-K (CH). Applicant's traversal is unpersuasive because, even thought the sequences may overlap, their searches are not coextensive and each requires its own search and considerations of other patentability issues. Furthermore, a search of more than one of the sequences present in these claims presents an undue burden on the Patent and Trademark Office due to the complex nature of the search in terms of computer time

needed to perform the search and the subsequent analysis of the search results by the examiner. In view of the foregoing, one sequence is considered to be a reasonable number of sequences for examination.

The restriction among the different sequences that may be used in the claimed methods is maintained.

The requirement is still deemed proper and is therefore made FINAL.

Claims 4-6, 50-52, 66-68, 80-82, 91-93, 100-102 and 109-111 are withdrawn from further consideration pursuant to 37 CFR 1.142(b), as being drawn to a nonelected invention/sequence, there being no allowable generic or linking claim. Applicant timely traversed the restriction (election) requirement in the reply filed on 11 February 2008.

Claims 1, 3, 10, 13-15, 39-49, 53-65, 69-79, 83-90, 94-99, 103-108, 112 and 113 are examined to the extent that they read on the elected sequence, SEQ ID NO:26.

Priority

Acknowledgement is made of Applicant's claim for priority under 35 U.S.C. 119(e) to United States Provisional Application No. 60/251,830 filed December 07, 2000. In light of the fact that the presently claimed subject matter is fully supported by the disclosure of this U.S. Provisional Application, benefit to this earlier filed U.S. Provisional Application has been granted. The effective filing date of the instant application is December 07, 2000.

Information Disclosure Statement

Applicant's Information Disclosure Statements (IDS) filed February 11, 2008 (one page) and November 08, 2007 (two pages) have each been received and entered into the application. As reflected by the attached, completed copies of form PTO-1449A (three pages total), the Examiner has considered the cited references.

The information disclosure statement (IDS) filed on September 17, 2003 is not in compliance with the provisions of 37 CFR 1.97. The non-patent literature citations on sheet 4-6 are not compliant with 37 CFR 1.98 (b)(5), *i.e.*, they are missing the titles. See MPEP §609. Appropriate correction is required.

Claim Rejections - 35 USC § 112, 2nd ¶

The following is a quotation of the second paragraph of 35 U.S.C. §112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 1, 3, 10, 13-15, 39-49, 53-65, 69-79, 83-90, 94-99, 103-108, 112 and 113 are rejected under 35 U.S.C. §112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 1 recites "assaying in a patient prostate or blood sample an expression product." Since the phrase "expression product" reads on both RNA and a polypeptide. Does this mean that the prostate cancer associated virus (PCAV) RNA or polypeptide can be assayed from both prostate and blood samples, or does this mean that the PCAV RNA is assayed in a prostate sample and the PCAV polypeptide is assayed in a

blood sample? Claim 1 also recites "an increased level of said expression product relative to a control sample level." The word "increased" is indefinite because it is unclear how much more expression as compared to the control sample is considered "increased" level of expression. Is it at least 110%, 120%, 130%, or 150%?

All the dependent claims, 3, 10, 13-15, 39-49, 53-65, 69-79, 83-90, 94-99, 103-108, 112 and 113, are also rejected.

In order to obviate this rejection, Applicants may consider amending the claim to read similarly to the following language:

Claim 1. A method of screening for early stage prostate cancer comprising:

1) obtaining a patient prostate or blood sample;

2) assaying said prostate sample for human mouse mammary tumor virus (MMTV)-like retrovirus subgroup 2 (HML-2) RNA that hybridizes under stringent conditions to a hybridization probe consisting of SEQ ID NO.: 26; or assaying said blood sample for an HERV-K (HML-2) polypeptide with an antibody;

3) comparing the detection signal level of RNA or polypeptide obtained in step 2) to a control sample,

wherein an increased level of at least 150% relative to a control sample indicates an increased incidence of prostate cancer in the patient.

Claim Rejections - 35 USC § 112, 1st ¶, scope of enablement

The following is a quotation of the first paragraph of 35 U.S.C. §112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the

art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

Claims 1, 3, 10, 13-15, 39-49, 53-65, 69-79, 83-90, 94-99, 103-108, 112 and 113 are rejected under 35 U.S.C. §112, first paragraph, because the specification, while being enabling for assaying HERV-K(CH) expression product, does not reasonably provide enablement for assaying PCAV expression product. The specification does not enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to use the invention commensurate in scope with these claims.

In making a determination as to whether an application has met the requirements for enablement under 35 U.S.C. 112 ¶ 1, the courts have put forth a series of factors (MPEP §2164.01(a)). See, *In re Wands*, 8 USPQ2d 1400, at 1404 (CAFC 1988); and *Ex Parte Forman*, 230 U.S.P.Q. 546 (BPAI 1986). The factors that may be considered include (1) the quantity of experimentation necessary, (2) the amount of direction or guidance presented, (3) the presence or absence of working examples, (4) the nature of the invention, (5) the state of the prior art, (6) the relative skill of those in the art, (7) the predictability or unpredictability of the art, and (8) the breadth of the claims. *Id.* While it is not essential that every factor be examined in detail, those factors deemed most relevant should be considered.

The instant invention is a method of screening for early stage prostate cancer, the method comprising the step of assaying in a patient prostate or blood sample, an expression product of a prostate cancer associated virus (PCAV) wherein an increased level of said expression product relative to a control sample level indicates that the patient should undergo further testing for the presence of prostate cancer, and wherein

said PCAV expresses an RNA that hybridizes, under high stringency hybridization conditions, to SEQ ID NO: 26, to a complement of the nucleotide sequence, or to a DNA sequence having at least 85%, 90%, 95%, 98% or 99% identity. SEQ ID NO: 26 is the antigenic sequence in the 3'-Pol region of a human endogenous retrovirus K (HERV-K), which is the human endogenous MMTV-like subgroup 2 (HML-2). The word "complement" reads on both the full length and the fragment complement sequence. The limitation "PCAV" encompasses all viruses that can hybridize with the HML-2 HERV-K(CH) 3'-Pol region or a homologous variant thereof, according to the description in the specification (page 7).

The guidance in the specification is limited to the up-regulation of one particular HML-2, which is designated as "HERV-K(CH)" (page 37-47). There is guidance to the detection of HML-2 polypeptides in a cell culture sample (page 15-18) and assaying the HERV-K(CH) RNA levels in patient prostate samples with hybridization probes (page 79-80), which shows that up-regulation by at least 150% (page 25) is associated with increased chance of prostate cancer. The specification does not provide guidance towards any other PCAV virus. The working example shows that not all HERV-K viruses display up-regulation of gene expression in association with prostate tumors (page 92, TABLE 9). For example, HML-2 displays expression up-regulation while HML-6 does not. There is one working example of diagnostic imaging in tissue samples of xenografted mice using HERV-K(CH)-specific antibodies (page 83-84).

The specification and the prior art does not teach how other members of HML-2 or HERV-K or PCAV are closely related to prostate cancer so that an up-regulation can

be detected in samples with increased incidence of prostate cancer. "Experimentation must not require ingenuity beyond that to be expected of one of ordinary skill in the art." See *Fields v. Conover*, 443 F.2d 1386, 170 USPQ 276 (CCPA 1970). In the instant case, a prostate cancer screening method detecting up-regulation of PCAV is not considered routine in the art, and without sufficient guidance in the art or the instant specification to the specific virus isolates to which this screen method applies, one skilled in the art is left with undue experimentation to identify all viruses that hybridize with the elected SEQ ID NO:26 and to verify the effectiveness of the screening method.

Applicants have not provided sufficient guidance to allow one skilled in the art to practice the full scope of the claimed invention with a reasonable expectation of success and without undue experimentation. In the absence of such guidance and evidence, the specification fails to provide an enabling disclosure. A conclusion of lack of enablement means that, based on the evidence regarding each of the above factors, the specification, at the time the application was filed, would not have taught one skilled in the art how to make and/or use the full scope of the claimed invention without undue experimentation. *In re Wright*, 999 F.2d 1557,1562, 27 USPQ2d 1510, 1513 (Fed. Cir. 1993).

Conclusion

No claim is allowable.

Applicant is reminded that any amendment must point to a basis in the specification so as not to add new matter. See MPEP §714.02 and §2163.06.

Correspondence

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Louise Humphrey, Ph.D. whose telephone number is 571-272-5543. The examiner can normally be reached on Mon-Fri, 9:30 am - 5:30 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Bruce Campell can be reached on 571-272-0974. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/L. H./
Examiner, Art Unit 1648

/Bruce Campell/
Supervisory Patent Examiner, Art Unit 1648